

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-35 (canceled)

Claim 36. (currently amended) Method for cryopreserving biological material comprising suspending said biological material in a vitrification solution, and directly contacting droplets of said suspension of biological material in vitrification solution, said droplets having an average volume not exceeding 10 μ l with a [substantially stationary] solid surface having a heat conductivity of greater than about 10 W/(m-k) at 20°C and a temperature of from about –150°C to about –180°C, wherein said vitrification solution has a concentration of cryoprotectant sufficient so that the glass transition temperature of the vitrification solution is raised and the formation of ice in the contacting with said solid surface is prevented.

Claim 37. (previously added) Method according to claim 36 wherein the biological material is a cell.

Claim 38. (previously added) Method according to claim 36 wherein the biological material is an oocyte.

Claim 39. (previously added) Method according to claim 36 wherein the biological material is an embryo.

Claim 40. (currently amended) Method for the vitrification of biological material comprising:

- a) suspending the biological material in a cryoprotective equilibration solution having a concentration of cryoprotectant sufficient so that the glass transition temperature of the cryoprotective equilibration solution is raised sufficiently to inhibit the formation of ice;
- b) ^{raising} raising the resultant equilibrated biological material with vitrification solution so as to incorporate said biological material in said vitrification solution wherein said vitrification solution has a concentration of cryoprotectant sufficient so that on cooling, the glass transition temperature of the vitrification solution is raised and the formation of ice in the contacting with said solid surface is prevented; and
- c) directly contacting microdroplets having an average volume not exceeding 10 μ l of said vitrification solution containing biological material with a [substantially stationary] solid surface having a heat conductivity of greater than about 10 W/(m-k) at 20°C and a temperature of about -150°C to about -180°C.

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Claim 41. (previously added) The method of claim 40, wherein the biological material is a cell.

Claim 42. (previously added) The method of claim 40, wherein the biological material is an oocyte.

Claim 43. (previously added) The method of claim 40, wherein the biological material is an embryo.

Claim 44. (new) The method of claim 36, wherein the surface is stationary.

Claim 45. (new) The method of claim 40, wherein the surface is stationary.